Data

Angle of rotation temperature switch up to 07/80	315° ± 5°
Angle of rotation temperature dial (starting 08/80)	180°

Conventional tools

1 Suction pressure gauge	or assembly tester	1 bar vacuum (atu) to 10 bar gauge pressure (atu)
1 High pressure gauge		0 – 40 bar gauge pressure (atu)
5 Thermometer		– 20° C to + 70° C
1 Hygrometer		

Note

Two test methods are available for checking air-conditioning system:

A. Quick test

For air-conditioning systems, free of complaints. Test after minor repairs, extended period of inoperation or the like.

B. Function test

In the event of complaints or for trouble diagnosis.

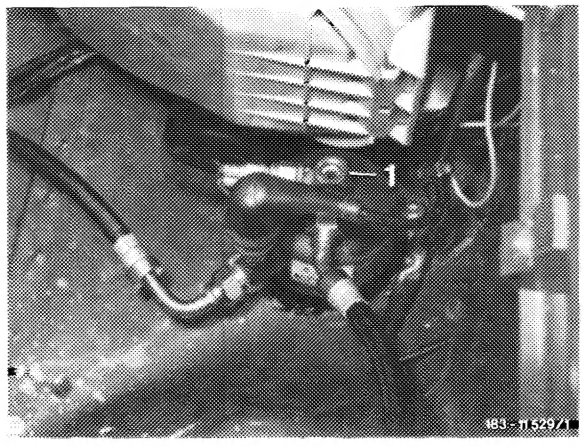
A. Quick test

Test method for ambient temperatures of + 20° C to + 40° C. Check values can be read after approx. 5 minutes.

Test conditions

1 Vehicle should not be exposed to sunshine before and during the test.

2 Switch-on air-conditioning system and watch through sight glass (1) in receiver dehydrator whether the refrigerant flows free of bubbles shortly after switching on electromagnetic clutch.

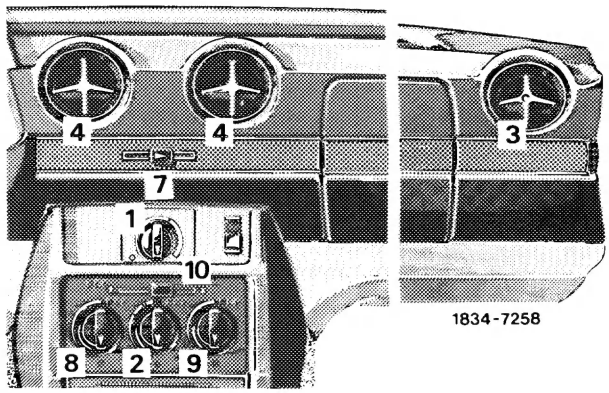


3 Heater switch (8 and 9) in position 0.

4 Set blower switch (2) to stage 3, full blower speed.

5 Up to 07/80 set temperature vacuum switch (1) to full cooling capacity.

6 Slide lever (10) to the right.



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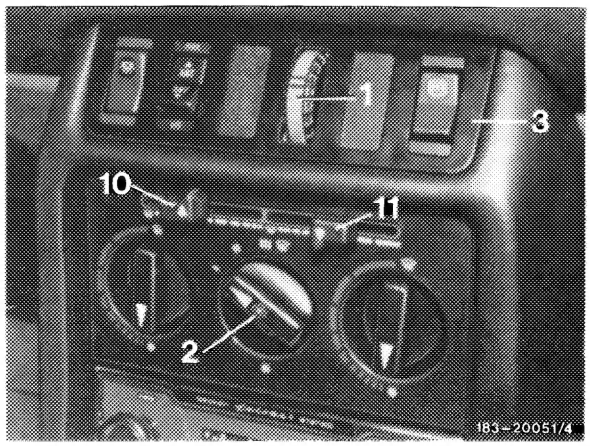
up to 07/80

7 Starting 08/80 engage temperature dial (1) at "Max."

8 Set levers (10 and 11) to inside stop.



starting August 1980

9 Slide lever (7) to the left (cooling air outlet center opened).

10 Open air nozzles (3).

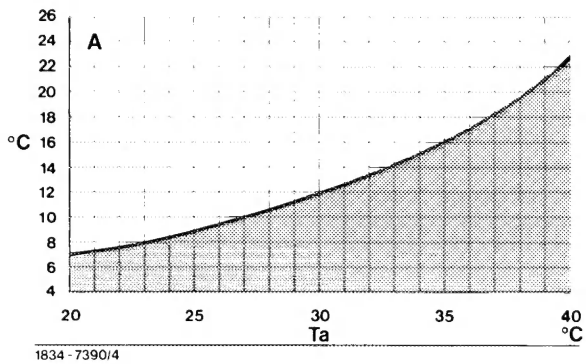
11 Insert one thermometer into center nozzle (4).

12 Attach one thermometer for ambient temperature (room temperature) approx. 2 m away from driver's side.

13 Open window and close vehicle doors. Run engine at approx. 2000/min.

14 After approx. 5 minutes read air outlet temperature at center nozzle and outside temperature on both thermometers and compare with values on table.

Note: The cold air outlet temperature should not be less than + 1° C.
Details on adjustment of temperature vacuum switch (83–542).



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A = air outlet temperature
Ta = ambient temperature (°C)

B. Function test

Note: Observe safety rules when working on air-conditioning system (83–504).

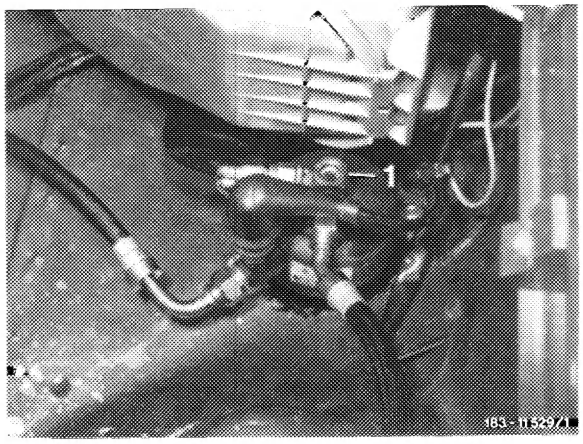
For checkups in workshop in the event of complaints about insufficient cooling capacity or for trouble diagnosis of air-conditioning systems, proceed according to the following test method which is suitable for room temperatures (ambient temperatures) from + 20° to + 40° C. All check data can be read after 10 minutes of constant operation.

Test conditions

15 Vehicle should not be exposed to sunshine before and during the test.

16 Check tension of V-belt for compressor drive.

17 Switch-on air-conditioner and watch reservoir on sight glass (1) to check whether the refrigerant flows free of bubbles soon after switching on electromagnetic clutch. Add refrigerant if required. If the refrigerant loss amounts to more than 200 g, check system for leaks (83–512).

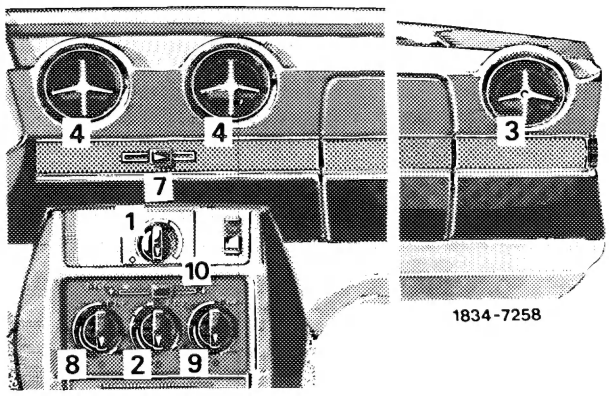


18 Heater switches (8 and 9) in position 0.

19 Set blower switch (2) to stage (3) (full blower speed).

20 Set temperature vacuum switch (1) to full cooling capacity.

21 Slide lever (10) to the right.



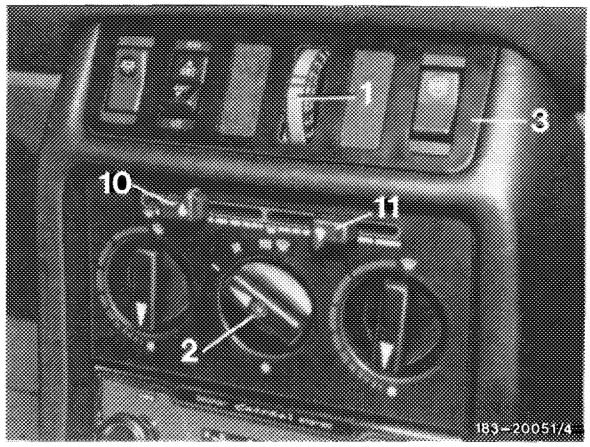
1834-7258

22 Starting 08/80 engage temperature dial (1) at "Max".

23 Set levers (10 and 11) to inside stop.

24 Slide lever (7) to the left (cooling air outlet center opened).

25 Open side vents left and right.



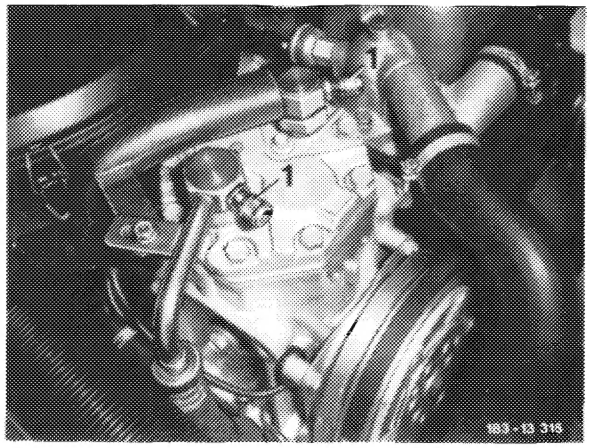
Starting 08/80

26 Insert one thermometer each into center nozzles (4) and into side ventilating nozzles (3).

27 Attach one thermometer for ambient temperature (room temperature) approx. 2 m from driver's side.

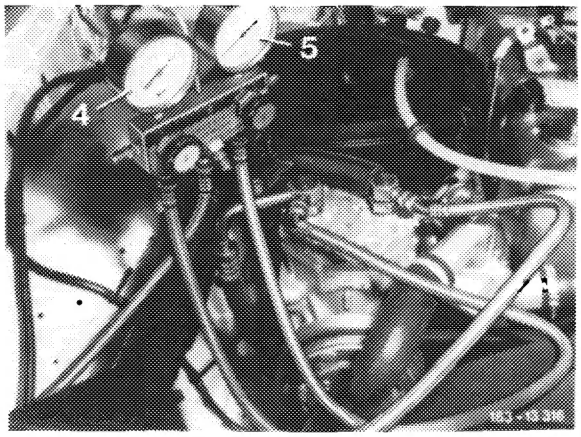
28 Place one hygrometer into tray of center console.

29 Unscrew closing caps (1). Then connect hose lines of suction pressure or high-pressure gauge (4 and 5) to service valves. Make sure that the connection nipple of hose lines has a pressure pin in center.



30 Check angle of rotation of temperature regulator by turning knob of temperature vacuum switch (1) to the right up to stop.
The marking on knob of temperature vacuum switch should arrive at end of blue key. If the angle of rotation of the temperature vacuum switch is smaller, replace temperature switch.

31 Open window and close vehicle doors.

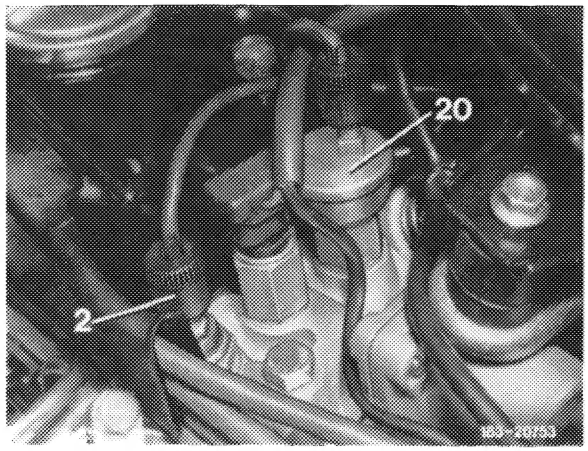


32 On vehicles with engines M 102 pull 1-pole coupler from temperature switch 100 °C (20) and connect to ground, so that the electromagnetic fan will run along during entire test procedure.

33 Run engine at approx. 2000/min.

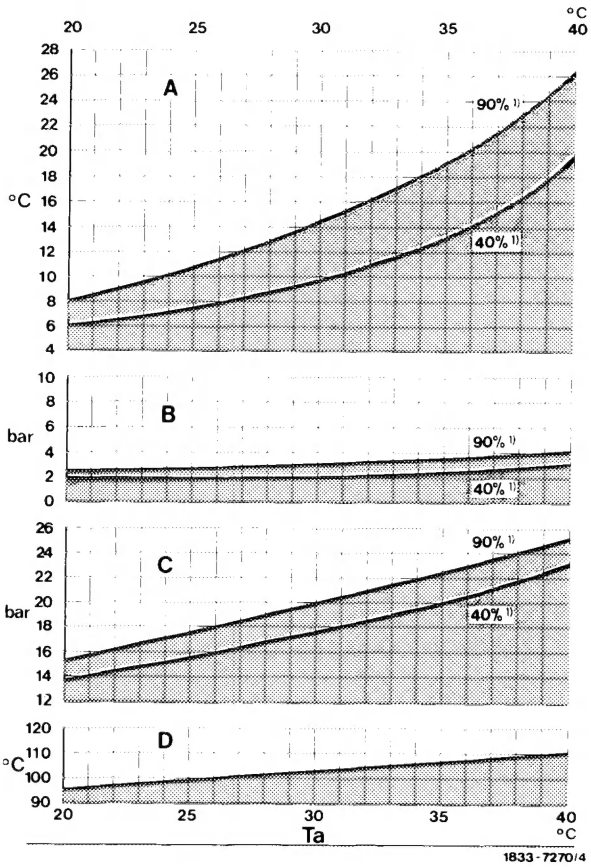
34 After approx. 10 minutes of operation, read values on thermometers and pressure gauges, as well as on hygrometer.

Note: Specified values are max. values and may not be exceeded.



35 Check suction and high pressure in dependence of ambient temperature (room temperature) by means of table. Check air outlet temperature (mean value of the four cold air outlet temperatures) also according to values on table. (The difference between the coldest and the warmest outlet temperature should not exceed 3 °C).

36 Check cutout temperature of temperature regulator, for this purpose insert a thermometer into center nozzle (4). Set blower switch (2) to stage 1 and temperature vacuum switch (1) to full cooling capacity or on vehicles starting 08/80 engage temperature dial at "Max". Run engine at approx. 2000/min.
After 3rd cutout of electromagnetic clutch the air outlet temperature should amount to approx. + 3 °C, but should not be less than plus 1 °C.

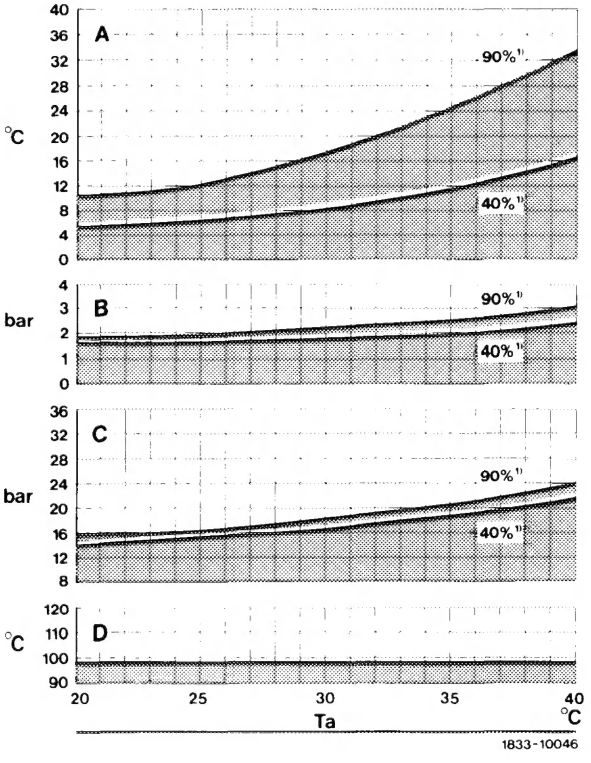


All models (except with engine 102)

1) Relative humidity of the air
Ta Outside temperature (°C)
A Air outlet temperature (°C)
B Pressure in front of compressor (bar)
C Pressure following compressor (bar)
D Coolant temperature (°C)

37 Adjust temperature vacuum switch (83–542).

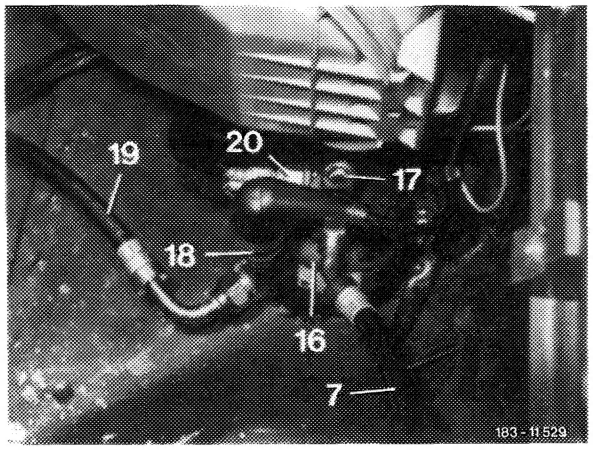
38 The supplementary fan in front of condenser for coolant temperature (100 °C) and refrigerant temperature (62 °C, on 4 and 5-cylinder vehicles 52 °C) is switched on at higher outside temperatures.



Engine 102

1) Relative humidity of the air
Ta Outside temperature (°C)
A Air outlet temperature (°C)
B Pressure in front of compressor (bar)
C Pressure following compressor (bar)
D Coolant temperature (°C)

39 When refrigerant loss is high or pressure in receiver dehydrator drops below 2 ± 0.2 bar, the voltage supply to refrigerant compressor is interrupted by pressure switch (18).
When the pressure increases to 0.6 bar above cutout pressure, the circuit is closed again.



40 Remove hose lines from service valves and close service valves again with closing caps.

41 On vehicles with engine 102, plug 1-pole coupler to temperature switch 100 °C (20).